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ABSTRACT

Different aspects of the mentoring process as reflected in Carter's Mentor Scale (1983) were studied. The scale is composed of 16 statements of mentoring behaviors, including the following functional roles for mentors: role model, emotional supporter/counselor, sponsor, and evaluator. Attention was directed to the following questions: whether the 16 mentoring behaviors in the scale reflect a single, unitary relationship; whether the 16 behaviors contain subsets of related behaviors that reflect the complexity of the mentor-protege relationship; and whether sex and age of graduate students affect mentoring behaviors. Data were obtained from Carter's research with 142 psychology graduate students at Peabody College of Vanderbilt University. Intercorrelations among Mentor Scale items for the sample were factor analyzed. Four mentoring roles were revealed. Differences were found in the rates with which students experience role modeling, professional socialization and sponsorship, advocacy, and emotional support, and active encouragement. Implications for the measurement of mentoring, adult development, and educational graduate programs are discussed. A literature review and bibliography are included. (SW)

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The Roles of Mentors in the Lives of Graduate Students

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Running Head: ROLES OF MENTORS

Abstract

This study attempted to determine what different aspects of the mentoring process are reflected in the Carter's (1983) Mentor Scale. Intercorrelations among Mentor Scale items in a sample of 142 psychology graduate students were factor analyzed. Four mentoring roles were revealed. Age x sex ANOVAs on mean factor scores indicated that differences exist in the rates with which students experience role modeling, professional socialization and sponsorship, advocacy, and emotional support and active encouragement. Implications for the measurement of mentoring, adult development, and educational graduate programs are discussed.

The Roles of Mentors in the Lives of Graduate Students

In recent years there has been an explosion of interest in the phenomenon of mentoring. The main reason for this resides in the fact that positive mentoring relationships appear to be consistently related to the career advancement and success of: young professionals (Bova & Phillips, 1981; Cook, 1983; Harmon-Bowman & Elmore, 1982; Missirian, 1980; Rehor, 1981; Roche, 1979; Stein, 1981; Queralt, 1982), students (Carter, 1983; George & Kummerov, 1981; McCaffrey & Miller, 1980), teachers (Fagan & Walter, 1982; Klopf & Harrison, 1981), faculty members (Queralt, 1982), managers, administrators or executives (McNeer, 1982; Missirian, 1981; Phillips, 1978; Roche, 1979), artists (Elwood, 1981), and writers (Halcomb, 1980). Although the results of these studies are compelling, most of them are correlational and only show that there is an association between acknowledgment of a mentor-protege relationship and a number of measures of success.

Besides the documented relationship with career development and success, mentoring is also associated with the developmental stages of adulthood. Since Levinson's work, the mentoring phenomenon has been valued as an important component to proper adult development (Burton, 1977; Levinson, Darrow, Klein, Levinson, & McKee, 1976). Levinson's (1978) contention that the mentoring relationship is developmentally significant in the adult life of both the mentor and protege has been substantiated by recent research (Schmoll, 1981). The needs to have a mentor in the 20's and 30's, and later to become a mentor, are considered as important components of progressive life stages. Levinson and his colleagues (1976) concluded from their study on male

adult development that a lack of mentors can be associated with various developmental handicaps and "problems of individuation in mid-life" (p. 23). Positive mentor-protege relationships have been found to be related to later positive adjustment (Burton, 1977) and to higher levels of self-actualization (Rawles, 1980).

Origins of the Term Mentor

The term mentor is not a new one. In Homer's "Odyssey", Mentor was the loyal friend of Odysseus who was entrusted to guide the education and development of Odysseus' son, Telemachus, while the father traveled the world in his ten-year odyssey (Clawson, 1980). Telemachus' education was to include every developmental facet of his life--physical, intellectual, moral, spiritual, social, and administrative. The first mentor thus served a variety of functions: teacher, coach, task-master, confidant, guide, counselor, and friend (Clawson, 1980).

Despite the fact that the mentoring idea has been around for centuries, the concept of mentoring and the significance of the mentoring relationship was not "rediscovered" and given prominence until the mid-1970's. Levinson (1978) is credited with having made salient and popular the concept of mentoring to professional audiences.

According to Levinson (1978), the mentor could be a teacher, a boss, an editor, or a seasoned coworker who takes the protege into confidence, imparts wisdom, sponsors, criticizes, and bestows a blessing. Levinson (1978) suggested that the term mentor evoked synonymous terms such as adviser, sponsor, and counselor. Actually, "it means all these things and more. Mentoring is defined not in terms

of a formal role but in terms of the character of the relationship and the function it serves" (Levinson, 1978; pp. 97-101, 251-256). Thus, the mentor can serve various important functions and play several roles in the mentoring process. At times, the mentor teaches his or her protege how to perform a needed skill or help him or her learn the ins and outs of their institution or organization. At other times, the mentor may be a trouble-maker, a disturber of intellectual equilibria who precipitates the protege into "just manageable difficulties" (Hobbs, 1965) to test him or her in situations of stress. In yet other times, the mentor may simply listen to the protege's troublesome feelings and provide emotional support. The mentor is, therefore, a person who wears several hats in his/her relationships with the protege: role model, emotional supporter and counselor, teacher, sponsor, referral agent, evaluator, advocate, consultant, advisor, facilitator, manager, and coordinator of environmental resources (Carter, 1983; Harmon-Bowman & Elmore, 1982; Klopf & Harrison, 1981; Levinson, 1978; McCaffrey & Miller, 1980; Schmidt & Wolfe, 1980).

While both the Homeric model of a life mentor and Levinson's modern description of a mentor agree that a mentor is someone who plays several roles concomitantly, the current usage of the term frequently conveys a specific, unitary meaning (Runions, 1982). That is, people call a mentor anyone who plays only one or two roles. For instance, in some studies the term mentor is used interchangeably with single-role terms such as advisor (Fagan & Walter, 1982), sponsor (Cameron, 1978; Schuler, 1979), or instructor (King & Bireley, 1982). However, "part of the essence of the...mentor-protege relationship [is] its

comprehensiveness" (Clawson, 1980; p. 147). When only some of these roles or functions are present, "the role being enacted is not mentoring" (Klopf & Harrison, 1981; p. 42). The hallmark of a mentor is thus the adoption of a variety of roles, sometimes several different ones concurrently; Kramer & Gardner (1977) have discussed this as part of the advisor role. In fact, mentors may adopt different roles so frequently that it is not easy to discern what roles the mentor plays that the proteges perceive as the most influential in their lives (Kramer & Gardner, 1977).

Although the importance of mentors for career success and the roles they serve has been extensively documented in the literature, there is no general agreement about what behaviors and roles constitute an appropiate definition of mentor. Overall, the generalizations made on the different roles the mentor takes over are not based on specific research; they come, rather, primarily from descriptive studies, novels, and literary works. Relatively little research has been done to ascertain empirically whether mentor is a unitary or a multifaceted construct including several roles (Stein, 1981). A review of the literature revealed no empirical work which defined the most relevant roles played by mentors for student proteges in the academic setting of graduate school.

The present study was undertaken to shed some light on the nature and extent of the mentoring relationship and to clarify the relevant roles the mentor plays in the lives of student proteges. The data used in this study are based on psychology graduate students' perceptions of behaviors which might be performed for them by persons they identified as their mentors.

This study sought to identify factors underlying items from the Carter Mentor Scale (Carter, 1983). This scale is composed of 16 statements of mentoring behaviors which were extracted from a number of descriptions of the mentoring process (Burton, 1977; Cameron, 1978; Kanter, 1977; Laws, 1975; Levinson, 1978; McNutt, 1979; Moore & Sangaria, 1979; Phillips, 1978; Phillips, 1979; Shapiro, Hazeltine, & Rowe, 1978; Schmidt & Wolfe, 1980; Wilson, Gaff, Dienst, Wood, & Bavry, 1975:). Functional roles for mentors covered in the scale include role model, emotional supporter/counselor, sponsor, evaluator, teacher/trainer/coach, transmitter of values, host and guide, advocate, exemplar, consultant/ adviser, and intellectual stimulator. In order to reduce the number of items included in the scale and to identify roles performed by mentors that graduate students perceived as most relevant, the relationships among responses to the 16 statements of mentoring behaviors were factor analyzed.

More specifically, the purpose of the present study was to determine from the empirical relationships among the 16 scale items whether the single Mentor Scale score most accurately reflected the nature and extent of mentoring behavior. If it did not and mentoring might best be seen as multifaceted, how many and what different roles do mentors play? If separate mentor role (factor) scores were calculated, would their means differ as a function of sex and age of the graduate students?

Mentoring and Graduate Education

The importance and significance of mentoring relationships to both the personal development and academic success of students has been

extensively documented (Enders, Winston, & Miller, 1982; Harmon-Bowman & Elmore, 1982; McCaffrey & Miller, 1980; Rehor, 1981). Carter (1983) found that scores on her Mentor Scale were the best single predictor of quality of life of psychology graduate students. The recognized importance of the role of mentors in the lives of students is such that Phillips (1979) asserted that the future of graduate studies will be contingent on how the mentor-student protege relationship is played out in graduate departments.

Specifically, mentors enhance the total development of students by creating relationships that "encourage responsibility, self-direction, and effective decision making" (McCaffrey & Miller, 1980; p. 204). Ways in which the mentoring relationship can be beneficial to students include: increasing students' satisfaction with the institution, enhancing students' ability to make curriculum choices, and increasing students' awareness of their strengths and potentials (McCaffrey & Miller, 1980). A successful mentoring relationship may help student proteges with acquisition of social skills, introductions to social networks, and acceptance in certain professional settings because of an association with a more prominent researcher (Artis, 1979).

Hepner and Faaborg (1980) found the typical mentor for most students is a faculty member (the student's advisor, a teacher, or a member of the student's doctoral committee) with whom the protege worked closely in college or graduate school and concluded that "most graduate students actively seek mentors through coursework, assistantship assignments, and dissertation advisors" (p. 22). For graduate students, professors are both the role sender and the primary

source of reward for successful performance and outcome, making the student-professor relationship crucially important (Butler, cited in Carter, 1983). In this regard, Heiss wrote: "The quality and character of the relationship between the doctoral student and his major professor is unequivocally the most sensitive and crucial element in the doctoral experience for it not only influences the graduate student's scholarly development but also has far-reaching aftereffects" (Heiss, as quoted in Clark, 1980).

Chickering (cited in Enders et al., 1982) postulated that meaningful interaction with faculty members increases a student's progress toward developing a sense of personal and intellectual competence. The sense of intellectual competence that students gain through significant interaction with faculty mentors matches with the motivations that students state for attending graduate studies. In his study about students' motivations for attending graduate school, Creager (1971) reported that 97 % (the highest percentage) of the participants responded that they attended graduate school to continue intellectual growth. This is consistent with Trow's (cited in Clark, 1980) finding. He reported that one of the motives given by students for attending graduate school was also to continue intellectual growth. Heiss (cited in Clark, 1980) concurred also with Creager and Trow. In his study, 51 % (the highest percentage) of the participants mentioned intellectual interests as one of the factors that influenced people's decisions to study for a doctorate.

Considering that positive mentoring relationships (a) enhance students' academic careers and lives, (b) involve faculty as the most

possible candidates to become mentors, and (c) include a set of identifiable behaviors suitable to be promoted, then it becomes feasible and desirable to make deliberate efforts at developing faculty members as mentors. The underlying notion is that the more faculty-student relationships resemble mentor-protege relationships, the more likely students will advance successfully in their careers and will develop wholly as scholars and human beings.

Mentoring and Sex of the Protege

It is generally agreed that the presence or absence of mentors influences the personal and career development of both men and women (Bolton, cited in Bova & Phillips, 1982) and that positive mentoring relationshps are greatly beneficial and are needed by both men and women if they are to succeed in their careers (Flach et al, 1981; Halcomb, 1980; Marsicano, 1981). However, mentoring relationships "are not democratic" and the way in which mentors and proteges engaged in the relationship is thought to be related to gender, social class, and race (Shapiro, Rowe, & Haseltine, 1978). Mentors tend to choose proteges who are similar to themselves or with whom they can identify (Holahan, cited in Carter, 1983; Kanter, 1977). Similarly, proteges themselves prefer mentors of the same sex (Flach et al., 1982).

Although women appear to have a special need for mentors more than men (Marsicano, 1981), women are less likely than men to have mentors (Shapiro et al., 1978). Women are less likely to have mentors simply because there is a scarcity of females in the professions in positions to assume the role of mentors. This phenomenon appears to be particularly true for the academic world, where men in top positions have greatly outnumbered women (Flach et al., 1982).

Female faculty are underrepresented in institutions of higher education (Association of American Colleges, cited in Marsicano, 1982). The underrepresentation of women faculty in positions to be mentors posits a problem in that women graduate students may be deprived of valuable female role models (Solmon, 1976). The result is that few female students have examples of how to be a female professional to identify with (Freeman, cited in Solmon, 1976). Yet, the fact of having female role models to identify with seems to be an important factor in the professional development of successful women.

Given that most mentors are males (Halcomb, 1981) and that similarity plays an important role in the identification process (Festinger, Merton, & Newcomb, cited in Queralt, 1982), it seems reasonable to expect that male mentors would tend to choose more often male rather than female proteges. This expectation has been substantiated by a recent survey conducted with men and women in professional associations and graduate programs by Bova and Phillips (1982). However, little is known about sex differences in the proteges' perceptions about the mentoring perceptions. Dowdall and Boneparth's study (cited in Marsicano, 1981) is one of the few that reports on sex differences in perceptions of mentors by proteges who were professors changing to academic administration. Males were more likely than females to expect letters of recommendations and appointments to new positions. Women were more likely to choose a mentor on the basis of personal knowledge while men more often based their choice on reputation.

No study was found which investigates sex differences in specific perceptions of mentors among graduate student proteges.

Mentoring and Age of the Protege

The phenomenon of mentoring has been seen as age related. Several studies agree on the beginnings of the mentoring relationships (Bova & Phillips, 1981; Brown, 1982; Hennig & Jardim, 1977; Levinson, 1978; Roche, 1979). The majority of the mentoring relationships seem to begin when the protege is approximately 20 to 30 years of age. This period corresponds to Levinson's (1978) "Entering into the Adult World" stage and coincides with the first 5 to 10 years of the protege's career development and growth (Barnier, 1981). Developmental tasks that correspond to this period are: (a) to explore the possibilities of the adult world, (b) to arrive at an initial self-definition as an adult, and (c) to establish a life structure that links this self-definition to the roles and behaviors of adults (Levinson, 1978).

According to Levinson et al (1976), the duration of the mentoring relationship fluctuates between 3 and 12 years. Termination of the mentoring relationship occurs when the protege is in his middle or late 30's. Persons over 35 to 40 years of age rarely have mentors. In fact, Levinson et al (1976) flatly stated that after the age of 40 men no longer had mentors. Instead, they assume the role of mentors themselves. Hennig and Jardim (1977), in their study of managerial women, also found that women lost their mentors at about 35 to 40 years of age.

Even though different developmental stages of the mentoring relationship have been roughly associated with age, there has been

little systematic study that specifically relates mentoring relationships to age of the protege. One of the questions addressed in the present study is whether the perceptions of mentoring behaviors change with the protege's age.

Research Questions

The present study was designed to answer two general questions concerning the complexity of the mentor-protege relationship and demographic variables associated with it.

1. Are the sixteen mentoring behaviors included in the Carter Mentor Scale reflections of a single, unitary relationship? Or, do the sixteen mentoring behaviors contain subsets of related behaviors which reflect the complexity of the mentor-protege relationship?
2. Is the incidence with which graduate students report different mentoring behaviors independent of their sex and age?

Method

Selecting the Data

Data used in the present study were taken from Carter's research on Quality of Life, Adjustment, and Stress Among Graduate Students (Carter, 1983). A secondary analysis of these data was performed.

Participants

Carter's sample consisted of 142 participants who were all enrolled in graduate programs at Peabody College of Vanderbilt University. There were 57 men and 85 women who ranged in age from 22 to 58 (M = 31.85; SD = 6.89).

Measures

Carter found the Mentor Scale to be a reliable and valid instrument. She reported a reliability (internal consistency) of .90 (N = 142), assessed with Cronbach's alpha. She provided as a measure of concurrent validity the point-biserial correlation (r = .65, p< .005) between the the Mentor Scale score and student response to the question "Have you had one or more mentors since being in graduate school?" Carter also found the total Mentor Scale score to be the best single predictor of overall quality of life for her graduate student sample.

Analysis of Data

Statistical analyses were performed by using the following computer programs contained in three sources: (a) SPSS: Statistical Packages for the Social Sciences, Second Edition, edited by Nie, Hull, Jenkins, Steinbrenner, and Brent (1975); (b) SPSS Update 7-9: New Procedures and Facilities for Release 7-9, edited by Hull and Nie (1981); and (c) BMDP Statistical Software 1983, Revised Printing, edited by Dixon (1983); according to problem requirements. All tests of significance for statistical comparisons were performed at the .05 level.

Age was grouped in four categories. Levinson's (Levinson et al., 1976) developmental stages were used as referents, for in some periods of adult development the mentor and mentoring relationships are believed to play crucial roles. The stages used were: (a) "entering adult world" (ages 22-27), (b) "transition" (28-32), (c) "settling down" (33-40), and (d) "middle-adulthood" (41 or older). This made it

possible to draw comparisons between Levinson's work and the present study.

Results

Factor Analysis of the Mentor Scale

A principal-components analysis with iterations was performed on the matrix of intercorrelations among the 16 items of the Mentor Scale. Varimax (orthogonal) rotations were performed to obtain a more interpretable final solution of the factors (Nunnally, 1967).

Table 1 summarizes the factorial structure of the Mentor Scale.

Insert Table 1 about here

Items with factor loadings of at least .35 were used to define the factors. The Kaiser-Guttman limit, which advocates that one drop all factors below an eigenvalue of 1.0, was the criterion adopted to determine which were the substantive factors to be extracted (Guertin & Bailey, 1970). Using this criterion, three factors qualified as substantive factors. However, a fourth factor with an eigenvalue of .99 was included in the final factor solution list because it was considered to be a "borderline" factor having a potentially important different grouping of variables. This decision is consistent with Cattell's (1978) observation that the Kaiser-Guttman rule is not always a reliable basis for decision and sometimes a decision has to be made on the basis of theory, especially if the study is an exploratory research.

The four factors identified were subsequently named "Role Model" (Factor 1), "Advocate" (Factor 2), "Professional Socialization and Sponsorship" (Factor 3), and "Emotional Support and Active Encouragement" (Factor 4). The mentoring behaviors included in the Role Model factor were: enhanced skills and intellectual development; served as intellectual stimulator; served as a role model of career-related behavior; transmitted the values of the profession; served as an exemplar to admire and emulate; and shaped the professional identity of the student protege. The Advocate factor included: counseled in times of stress and defended against others' criticism. The Professional Socialization and Sponsorship behaviors included: introduce to other professionals; assisted in the career (obtaining a job, resolving financial problems, doing research or publishing); served as a guide or host by familiarizing with resources, customs, and cast of characters within the profession; taught the "ropes" or translated the political arena; and provided important information. Emotional Support and Active Encouragement items relating to the emotional side of the mentor-student protege relationship included: encouraged success; provided emotional support; and encouraged high quality work and offered constructive criticism.

Table 2 indicates the eigenvalues and the percentage of variance accounted for by the four factors in the principal component solution.

Insert Table 2 about here

The correlations among the four sets of factor scores were relatively substantial as shown in Table 3.

Insert Table 3 about here

Since the factors are correlated among themselves, meaning that the many items that comprised a factor are not conceptually independent, an oblique rotated solution was computed using SPSS Subprogram "Factor" (Kim, 1975; pp. 468-514). The oblique approach led to essentially the same conclusions about the number and kinds of factors inherent in a particular matrix of correlations. The different items loaded on the same factors, but two factors appeared in different order (i.e., factor 1 and 2 were the same in both orthogonal and oblique approaches, and factor 3 of the orthogonal was 4 in the oblique and vice versa).

Sex x Age Comparison of Overall Mentor Scale Scores

Mean total Mentor Scale scores used by Carter (1983) were compared for sex and age subgroups in a 2 x 4 (Sex x Age) factorial analysis of variance design, using BMDP Subprogram Fixed Effects Factorial Design; 2V.1 (Jennrich et al, 1983; pp. 360-363). The analysis of variance revealed that neither main effects of sex or age nor the interaction were significant.

These findings suggest that the levels of mentoring experienced by the students are independent of these personal characteristics. Crosstabulations of "Yes" and "No" responses to individual scale items by sex and by age suggested, however, that some differences may be

masked by the use of the total score as the index of level of mentoring.

Incidence of Mentoring Behaviors for Age and Sex Groups

Tables 4 and 5 indicate the relative incidence with which students reported the mentoring behaviors covered in the Mentor Scale. Sex and age differences in these percentages were examined by chi-square analyses through SPSS subprogram "Crosstabs" (Nie et al., 1975; pp. 218-248).

Insert Table 4 about here

Insert Table 5 about here

As shown in Table 4, percentages of students reporting the mentoring behaviors for the two sexes combined ranged from 85 % for "enhanced your skills and intellectual development" to 34 % for "defended you against criticism from others". The majority of students (more than 50 %) reported having experienced 13 out of the 16 mentoring behaviors. Male and female students did not differ in the incidence of the behaviors, except that females reported that mentors taught them the "ropes" or translated the political arena for them more frequently (53 %) than did male students (33 %), $\chi^2(1) = 5.30$, $p<.025$. The absence of consistent sex differences was unexpected on the basis of the literature but was generally consistent with the results of the ANOVA performed on total mentor scores.

Age differences were found, however, in relationships with the specific mentoring behaviors. As shown in Table 5, the incidence of mentoring behaviors varied significantly on five items: (a) "encouraged high quality in your work and offered constructive criticism" $\underline{X}^2(3) = 7.88$, $\underline{p}<.05$; (b) "provided important information" $\underline{X}^2(3) = 8.71$, $\underline{p}<.05$; (c) "transmitted them the values of the profession to you" $\underline{X}^2(3) = 8.63$, $\underline{p}<.05$; (d) "shaped or reinforced your professional identity" $\underline{X}^2(3) = 9.42$, $p<.02$); and (e) "introduced you to other professionals" $\underline{X}^2(3) = 10.55$, $\underline{p}<.025$. On these items, as well as on the other 11 where the chi-square values did not reach the .05 significance level, men and women over 41 years of age reported the behavior less frequently than the other three age groups. Thus, as it might be anticipated, for the oldest group of students there was a general decline in the frequency with which they reported having mentoring relationships.

Sex x Age Comparison of Mean Factor Scores

Mean factor scores were compared for sex and age subgroups in a 2 x 4 x 4 (Sex x Age x Factor) repeated measures analysis of variance using BMDP Subprogram Repeated-Measures Design; 2V.7 (Jennrich, Sampson, & Frane, 1983; pp. 368-369). The analysis revealed a significant three factor interaction $\underline{F}(9,396) = 2.10$, $\underline{p}<.029$ with means balancing out so that age, sex, and factor main effects were nonsignificant (see Table 6 and Table 7).

Insert Table 6 about here

Insert Table 7 about here

To ascertain the nature of the sex x age x factors interaction, post hoc analyses were conducted. Mean factor scores of the separate factors were compared for students' sex and age subgroups in four 2 x 4 (Sex x Age) factorial designs, using BMDP Subprogram Factorial Design; 2V.1 (Jennrich et al, 1983). The analysis indicated that when the interaction was broken down by factors so that the comparisons were all based on between subjects error terms, the ANOVA main effects and interactions were nonsignificant. With respect to two of the mentor factor profiles across ages, however, there were large differences between the means for men and women. These were compared using Student t tests at less stringent levels of significance (alpha <.10) to see if these differences were theoretically meaningful and worthy of pursuing in future studies. The results of two of the factors indicated graphically were as follows:

Role Model. Figure 1 shows the mean factor scores for the Role Model factor for male and female students at different age subgroups. After the 28 to 32 age period, women dramatically increased in the reported incidence of role modeling. The oldest women (40 or more) reported the highest incidence. With men the pattern was reversed. Men at the 28-32 period reported the highest incidence of role modeling, with a sustained decline after this age. The oldest men (40 or more) reported very little role modeling.

Insert Figure 1 about here

Emotional Support and Active Encouragement. As shown in Figure 2, male graduate students have a contrasting pattern on the Emotional Support and Encouragement factor to that of females across the different age periods. Men in the middle years (33-40) reported this behavior most frequently while comparable aged women reported it least. An interesting observation here is that if the 22 to 27 year women's age periods are shifted so that their period coincides with the 28-32 year period for men, the patterns for men and women become remarkably similar.

Insert Figure 2 about here

Discussion

Results of Carter's (1983) original study and the one reported here suggest that the Carter Mentor Scale may be viewed profitably either as a global measure of the extent to which students experience mentoring behaviors or as a more analytical measure of the types of mentoring behaviors they experience. The fact that the total score derived from the scale was the best single predictor of student quality of life in Carter's study and was very consistent internally for the total sample of men and women students of different ages argues strongly for the unitary characteristic of a mentoring experience. The evidence presented here for factorial complexity and the hint that sex

and age differences may exist for some, but not all, mentoring behaviors argues for the multidimensional perspective on mentoring.

These two views of the mentoring process and the Carter scale are not incompatible. The intercorrelations among the mentor factors suggest that there may be two second order factors among the four primary factors identified. Role modeling, advocating, and sponsoring seem to be aspects of professional preparation. Encouraging behavior, as represented in the Carter scale, appears, on the other hand, to be more affective in nature. The negative correlation between the intellectual/professional mentoring behaviors and the more nurturant ones suggests a slight tendency for some students to find succorance while others find stimulation from their mentors.

This result can be seen also by looking at both Figures 1 and 2 and comparing the women's pattern on the Role Model factor with the women's pattern on the Emotional Support factor. While women age 28-32 report little role modeling, the same women report relatively high emotional support. The same contrasting pattern is found in women of ages 33 to 40 and men of ages 22 to 40. The contrast between those two factor scores is even more remarkable in the case of the men students. Kahnweiler and Johnson (1980) reported a similar finding in their study. According to their women participants (average age was 39), "the mentor offered them more often emotional support than functional support (i.e., knowledge and skills)" (p. 416).

The lack of significance in both main and interaction effects in the sex by age ANOVA using the total Mentor Scale score as dependent variable and the significant three-factor interaction (sex x age x

factors) when the total score was broken down by factors suggest that studies that treat mentoring as a single, unitary concept may fail to reveal differences in these mentor roles and in the treatment of men and women at different ages. Thus, this study adopted the point of view that mentoring is a multidimensional construct rather than a unitary one.

The identification of the roles that the mentor plays as role model, advocate, facilitator of professional socialization and sponsor, and provider of emotional support and active encouragement agrees with the literature that touches on the several roles that the mentor enacts in the mentoring relationship (Flach et al., 1982; Klopf & Harrison, 1981; Levinson, 1978; Shapiro et al., 1978; Schmidt & Wolfe, 1980). These roles generally coincide with Levinson's (1978) description of functions the mentor serves: role model, sponsor, and host and guide in providing his or her protege with professional socialization. In addition, the mentor acted here as a provider of emotional support. Schmidt and Wolfe (1980) and Flach et al (1982) mentioned both role model and sponsor as one of the primary functions of the mentor. Klopf and Harrison (1981) also are in substantial agreement with present findings in their listing of role model, sponsor, and counselor as the major roles of mentors.

The concordance between the findings of this study with those of the literature regarding the number and type of the roles the mentor plays is not surprising; the specific mentoring behaviors represented in the Mentor Scale were drawn directly from that literature. However, the contribution of the present study was to identify, with an

empirical basis, the number and type of primary roles the mentor plays in the lives of psychology graduate students as perceived by the students themselves. This goes beyond what Carter (1983) did, for she only used the total scores of the Mentor Scale to relate to the students' quality of life.

With respect to the incidence of occurrence of the individual mentoring behaviors, 85% of the students (the highest percentage) stated that their mentors enhanced their skills and intellectual development. Likewise, 84% responded that their mentor provided them with intellectual stimulation. These perceived mentoring behaviors match the motives stated by students for attending graduate school (Craeger, 1971; Heiss, 1964; Trow, cited in Clark, 1980). If it is assumed that these motives apply to the present study's sample, it can be said that the mentors are fulfilling the students' desires for attending graduate school.

Contrary to what was expected on the basis of the literature before Carter (1983), there were no sex differences in the student's perceptions of individual mentoring behaviors. The only significant sex difference appeared on one of the items that had the lowest incidence of occurrence (i.e., "taught politics"). Females reported that mentors taught them the "ropes" or translated the political arena for them more frequently (53 %) than did male students (33 %). There are no related findings in the literature that might explain this unexpected result. Sex differences were not found, however, in such mentoring behaviors as role modeling, introductions, host and guide.

Thus, at least at Peabody College, female student proteges generally experienced as frequently as males the different mentoring behaviors represented in the Mentor Scale. This conclusion is consistent with Kelly's (1982) finding concerning sex differences among student affairs professionals. Kelly (1982) reported that there was no difference between men and women students in this area with regard to likelihood of experiencing a relationship with a mentor.

The incidence of occurrence to the individual items at different ages suggests that there is a decline of perceived mentoring relationships after age 40. The oldest group of students consistently reported less frequently than the other three age groups each of the 16 behaviors of the Mentor Scale. This may be due to the fact that the definition of mentor presented in the stem question depicted as mentors only those persons older than the students. Since faculty members are the most likely candidates for being nominated as mentors by the students, and at the time this study was conducted 70 % (21 out of 30) of Peabody's faculty members were below age 40, one could think that the result mentioned may be due to an artifact. If this explanation were true, one would expect no significant differences among the age groupings on the frequency of occurrences of all the individual behaviors in the Mentor Scale. However, significant differences were found in five out of the 16 behaviors. This suggests that at least some mentoring relationships are related to the student proteges' ages. The present study thus supports the notion that mentoring relationships are more likely to occur at some ages than at others.

These findings coincide with Levinson's (1978) contention that after about age 40 men rarely have mentors. A possible explanation for this finding may be that male and female students who are 40 or older no longer require expression and satisfaction of needs through significant others, or at least they perceived fewer such needs. It could also be that the older persons have had more professional experience and thus have less need for, or tolerance of, a relationship to a mentor (Carter, 1983).

The results depicted in Figure 1 representing the perceptions of student proteges about the role of mentor as a model suggest that males ages 28 to 32 have the highest level of role modeling, while men over 40 do very little of it. These results support, at least in part, Levinson's (1978) contentions that men aged 28-32 are in transition and in need of mentors and that men after age 40 only rarely have mentors.

Female students at ages 28 to 32, in sharp contrast to males of the same age period, reported the lowest level of role modeling. After this period (28-32), females reported a notable, sustained increase of role modeling. It is interesting to note that while for men, the role modeling dimension of mentoring reached a peak in the late twenties and early thirties, for women the role modeling experience just began in their late twenties, and showed a sustained increase after 32 years of age. Kahnweiler and Johnson (1980) reported a study that gives support to this observation. These authors found that almost 75 % of a sample of 40 women returning to school "had experienced a relationship with a mentor after reaching 30 years of age" (p. 416). The difference between the findings of the present study and Kahnweiler and Johnson's

findings is that the former concerns specifically one dimension of the mentoring relationship (i.e., role model), while the latter concerns mentoring relationships in general. These authors also speculated that "it may be that women are not involved with mentors until the midlife stage of development, while men experience this relationship during their early adulthood period" (p. 416). Other studies provide evidence that while men experience mentoring during the "Entering the Adult World" period (ages 22-27), women experience mentoring for the first time during their thirties. This situation might suggest that in their careers women may be one developmental stage behind men. This "developmental lag" seems to be related to the adult life structure of contemporary American women. While career and work (occupation) is the primary base for men's life in American society (Brown, 1982), "the major defining factor of the adult life structure for women" is a combination of familial and occupational roles (Brown, 1982; p. 30). Stewart (1977) found that women who followed a traditional pattern of marriage and motherhood during their twenties, addressed seeking a relationship with a mentor for the first time during their thirties. This finding is substantiated by a more recent study by Baker (1981) when she claims that "...women who have followed traditional life paths will be developmentally at least 10 years behind a man of the same chronological age" (p. 22). Brown (1982) also found that for her participants who interrupted their careers for childrearing, "the mentoring relationship was not significant until these subjects had returned to their career development" (p. 86). Thus, it may be that women who begin to experience mentoring relationships after age 30

choose to do so, not because they are behind (as compared to men) in accomplishing their developmental tasks, but because they made commitments to marriage and family in their twenties and after this time they decided to pursue a different "career". Interestingly enough, the sample of women over 28 years of age (of the present study) was composed of 29 % (13 out of 49) single women and 71 % married, separated, or divorced women. Thus, this study provides additional support to the notion that, in contrast to men who begin to experience mentoring relationships in their early adulthood (22 years of age), women who had followed a pattern of marriage and motherhood early in their careers begin to experience mentoring relationships after their thirties.

Limitations of the Mentor Scale

Carter (1983) points out that most of the significant relationships included in her scale are heavily concerned with academic issues. By using these academic-related content items, the responses elicited did not touch on other kinds of mentoring relationships student proteges had experienced. The influence of mentors is not restricted solely, however, to the intellectual or academic development, but rather involves all aspects of the lives of the proteges (Barnier, 1981). In fact, the mentoring relationship has implications for enhancing optimum student development in intellectual, emotional, and social areas (McCaffrey & MIller, 1980). The mentor is involved with the total development of the individual protege (Barnier, 1981). In this respect, the Mentor Scale thus fails to address relationships beyond the academic area--relationships built around values and personal philosophy and personal problems or concerns.

In addition, the Mentor Scale addresses only benefits proteges receive from the mentors. Perceived negative behaviors in the mentoring relationships were not addressed at all by the Mentor Scale (Carter, 1983). Carter recognized this limitation, however, and suggested that negative mentoring relationships should be investigated as well. "It is important to understand the full impact of mentoring, both positive and negative" (Carter, 1983; p. 101).

In her dissertation, Carter (1983) advanced some suggestions for the improvement of her Mentor Scale. Among the suggestions, she included "social support items" such as "provided resources in times of need", "nourished your self-esteem", "provided comfort", and "supported your discharge of negative feelings". She also recognized that the instructions provided in the stem question limited the quality of the answer in two ways: (a) the answer was limited to only one professional, and (b) was limited to only the students' graduate school experience. She acknowledged that mentoring relationships could have happened with more than one mento and suggested that a respondent might need "...to complete a separate Mentor Scale for each individual who had performed any of the [mentor] roles..." (p. 97). She also proposed to omit the referent <u>older</u> from the stem question and to simply ask the respondents if the person to whom they refer was older than they. In addition, she suggested that one substitute the referent "graduate school" for "adult life" or even a less inclusive possibility such as "during your career preparation and experience thus far" (Carter, 1983; p. 97). Another potential weakness aknowledged by Carter was the dichotomous response format of the scale. She suggested

to use instead a Likert-type scale format with 3 to 5 categories per item to improve the quality of responses elicited by the scale.

Although the Mentor Scale has its own merits in terms of psychometric and statistical properties (i.e., internally consistent and valid), it was assumed, since this research started, that the instrument is not an isomorphic representation of the complexity inherent in the phenomenon of mentoring. That is, it was not assumed that the Mentor Scale is the construct of mentoring. To further study the phenomenon of mentoring it may be wise thus to take O'Neal and Wrightsman's (in press) recommendation of using multiple converging empirical operations. They noted that "the phenomenon is too rich, complex, and multi-faceted for adequate description through the use of a single procedure" (O'Neal & Wrightsman, in press; p. 35).

Implications for Policy and Further Research

Besides the frequently mentioned relationship between positive mentoring and students personal and career development, it has been found that constructive mentoring relationships may be helpful in enhancing the students' quality of life (Carter, 1983). Carter (1983) noted that graduate students are a group worthy of intervention because the graduate school experience engenders relatively high levels of stress in the students. She suggested that positive mentoring may help in increasing the students' positive aspects of their life.

Since mentoring "offers potential for institutions of higher education seeking ways to maximize student development" (Thomas, Murrell, & Chickering, 1982; p. 49) and if we assume that those persons concerned with the improvement of graduate education have a

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Since mentoring "offers potential for institutions of higher education seeking ways to maximize student development" (Thomas, Murrell, & Chickering, 1982; p. 49) and we assume that those persons concerned with the improvement of graduate education have a

professional and moral responsibility to provide the best possible conditions for students (Topp, 1977), then an important responsibility of the university may be to develop faculty members as mentors and to provide students with opportunities to find mentors. Substantial improvement in education might be achieved thus by creating conditions that maximize the likelihood of significant encounters occurring between greater numbers of mentors and students (Wilson et al., 1975). However, effective mentoring relationships depend not only on the personal qualities of mentors and students but also on the setting in which these relationships happen. Since interpersonal relationships are heavily influenced by institutional arrangements, conditions that maximize the likelihood of significant encounters occurring between greater numbers of mentors and students may be created and promoted (Wilson et al., 1975). A synthesis of the literature and research on mentoring in graduate schools points to the importance of developing mentoring programs which can be incorporated into graduate programs. Carter (1983) delineated several strategies through which universities can promote mentoring relationships. She included:

1. Using demostrated mentoring abilities as a criterion in recruitment efforts.
2. Serving as a mentor may be included as a criterion in faculty reward decisions such as promotion and tenure.
3. Sponsoring workshops which explain the nature of the mentoring relationships and its inherent rewards.
4. Sponsoring research and workshops regarding the need to foster "love skills" as well as "work skills" in proteges.

Another strategy, in addition of those of Carter, may be to provide time and incentives to potential mentors to allow them to nurture the relationship.

Currently, there are several universities and colleges that have implemented mentoring programs, and evidence is accumulating that participants benefit from them (see Brown & DeCoster, 1982 for a comprehensive review of how mentoring programs can be created, implemented, and evaluated; see also Knott & Daher, 1981; Lester & ohnson, 1981). For instance, Lester and Johnson (1981) report that minority students who participated in a mentoring program implemented at the University of California, Irvine, have "achieved higher grades, became more actively involved in student life, served on more student committes, and expressed feelings of greater comfort in the institution" (p. 54).

Despite the fact that mentoring programs exist in various forms on different campuses, it may be necessary to know more about the nature, extent, and scope of the mentor-protege relationship, the processes of development and transition of the mentoring relationship, and the developmental nature of mentoring in the life cycle of both mentors and proteges. Future studies should examine the processes that lead to successful as well as unsuccessful mentoring relationships. Such an emphasis could answer questions such as what characteristics potential proteges have that attract mentors. Another area yet to be investigated concerns the process whereby the right protege finds the right mentor (and vice versa), i.e., a "harmonious match" (Hodgkinson, 1974).

The area of mentoring is in the initial stages of theory building (O'Neal & Wrightsman, in press). The present study which sheds some light on roles mentors play as perceived by students proteges in graduate programs in psychology should stimulate inquiry in other areas. A word of caution is in order, however, since this study's sample was limited to only psychology doctoral students. It would be interesting to see whether the factors identified in this study as the main roles the mentor plays can be generalized to other academic disciplines as well as to other samples more representative of the overall population.

The great majority (if not all) of the studies available in the literature are retrospective in nature and focused on relating present career success with past mentoring experiences (Carter, 1983). These are correlational studies and do not demonstrate conclusively a value in mentoring. All they show is that an association exists between a perceived mentor-protege relationship and some measure of success. It may well be that successful persons are more sensitive to the help received from mentors and more secure in acknowledging it. Or, it may be that "rising stars" attract mentors, older colleagues who enjoy success vicariously. Mentoring and career as well as personal development should be monitored prospectively through the use of longitudinal designs. The prospective and longitudinal collection of data relevant to the mentoring process from both perspectives--mentor's and protege's--is a prerequisite to progress in this area. Only then we will know whether having mentors bears a direct, temporal relationship with protege's career success and proper adult development.

References

Artis, S. E. (1979). Federally sponsored mentorship programs to increase the participation of women and minorities in educational research and development. National Institute of Education. (ERIC Document Reproduction Service No. ED 197 000).

Baker, C. E. (1981). Self-renewal and the life cycle: Implications for men and women in administration. Paper presented at the annual metting of the National Conference of Professors of Educational Administration, Seattle, WA, August. (ERIC Document Reproduction Service No. ED 212 058).

Barnier, L. A. (1981). A study of the mentoring relationship: An analysis of its relation to career and adult development in higher education and business. Unpublished doctoral dissertation, Idaho State University.

Bova, B. M., & Phillips, R. R. (1981). The mentor relationship. A study of mentors and proteges in business and academia. (ERIC Document Reproduction Service No. ED 208 233).

Bova, B. M., & Phillips, R. R. (1982, November). The mentoring relationship as an educational experience. Paper presented at the National Conference of the Adult Education Association of the USA, San Antonio, TX. (ERIC Document Reproduction Service No. ED 224 944).

Brown, B. E. (1982). Married, academic, women in mid-life transition. Unpublished doctoral dissertation, Temple University, Philadelphia, PA.

Brown, R. D., & DeCoster, D. A. (Eds.). (1982). Mentoring-transcript systems for promoting students growth. New directions for students services. Number 19. San Francisco, CA: Jossey-Bass.

Burton, A. (1977). The mentoring dynamic in therapeutic transformation. The American Journal of Psychoanalysis, 37, 115-122.

Cameron, S. M. (1978). Women in academia: Faculty sponsorship, informal social structures and career success. Ann Arbor, MI: Michigan University Center for the Study of Higher Education. (ERIC Document Reproduction Service No. ED 153 557).

Carter, F. J. (1983). Quality of life, adjustment, and stress among graduate students. Unpublished doctoral dissertation, George Peabody College of Vanderbilt University, Nashville, TN.

Cattell, R. B. (1978). The scientific use of factor analysis in behavioral and life sciences. New York, N.Y.: Plenum Press.

Clark, A. (1980). Adult development and the experience of graduate education. A review of the literature. San Francisco, CA: Association for Humanistic Psychology. (ERIC Document Reproduction Service No. ED 197 067).

Clawson, J. G. (1980). Mentoring in managerial careers. In C.B. Derr (Ed.) Work, family, and the career. New frontiers in theory and research. New York: Praeger Publishers.

Cook, A. S. (1983). Contemporary perspectives on adult development and aging. New York: Macmillan Publishing.

Cook, M. F. (1979). Is the mentor relationship primarily a male experience? Personnel Administrator, 24(11), 82-86.

Creager, J. A. (1971). The American graduate student: A normative description. ACE Research Reports, 6(5).

Dixon, W. J. (Ed.). (1983). BMDP Statistical software 1983: Revised printing. Berkeley, CA: University of California Press.

Elwood, W. R. (1981, August). The necessity of the faculty mentor in the development of the artist-scholar. Paper presented at the annual meeting of the American Theatre Association, Dallas, TX. (ERIC Document Reproduction Service No. ED 212 012).

Enders, S. C., Winston, R. B.,Jr., & Miller, T. K. (1982). Academic advising as student development. In R. B. Winston, Jr., S. C. Enders, & T. K. Miller (Eds.) Developmental approaches to academic advising. New directions for student services series. San Francisco, CA: Jossey-Bass.

Fagan, M. M. & Walter, G. (1982). Mentoring among teachers. Journal of Educational Research, 76(2), 113-117.

Flach, D. H., Smith, M. F., Smith, W. G., & Glasser, M. L. (1982). Faculty mentors for medical students. Journal of Medical Education, 57, 514-520.

George, P., & Kummerov, J. (1981). Mentoring for career women. Training/HRD, 18(2), 44-49.

Guertin, W. H., & Bailey, J. P. (1970). Introduction to modern factor analysis. Ann Arbor, Mich: Edwards Brothers.

Halcomb, R. (1980). Mentors and the successful women. Across the Board, 17(2), 13-18.

Harmon-Bowman, M., & Elmore, R. T., Jr. (1982, March). The role of mentoring in the development of professional psychologists. Paper presented at the annual meeting of the Southeastern Psychological Association, New Orleans, LA.

Hennig, M., & Jardim, A. (1977). The managerial women. New York: Anchor Press/Doubleday.

Hepner, M. M., & Faaborg, L. W. (1979). Women administrators: Careers, self-perceptions, and mentors. (ERIC Document Reproduction Service No. ED 193 782).

Hobbs, N. (1965, October). The professor and the student or the art of getting students into trouble. Paper presented at the 48th annual meeting of the American Council of Education, Washington, D.C.

Hodgkinson, H. L. (1974). Adult development: Implications for faculty and administrators, Educational Record, 263-274.

Hull, C. H., & Nie, N. H. (Eds.). (1981). SPSS Update 7-9: New procedures and facilities for releases 7-9. New York: McGraw-Hill.

Jennrich, R., Sampson, P., & Frane, J. (1983). Analysis of variance and covariance including repeated measures. In W.J. Dixon (Ed.) BMDP Statistical Software: 1983 Revised Printing. Berkeley, CA: University of California Press.

Kahnweiler, J. B., & Johnson, P. L. (1980). A midlife developmental profile of the returning women student. Journal of College Student Personnel, 21, 414-419.

Kanter, R. M. (1977). Men and women of the corporation. New York: Basic Books.

Kelly, K. E. (1982). The initiation of protege-mentor relationships among student affairs professionals in Virginia institutions of higher education (Doctoral dissertation, The George Washington University, 1982). Dissertation Abstracts International, 43, 690A.

Kelly, L. Y. (1978). Power guide. The mentor relationship. Nursing Outlook, 26(4), 339.

King, R., & Bireley, M. (1982). Undergraduate selection/retention in Wright State University's College of Education and Human Services. (ERIC Document Reproduction Service No. ED 220 458).

Klopf, G. & Harrison, J. (1981). Moving up the career ladder: The case for mentors. Principal, 61(1), 41-43.

Knott, J. E., & Daher, D. (1981). Project Synergy. In J. Fried (Ed.) Education for student development. New directions for students services. Number 15. San Francisco, CA: Jossey-Bass.

Kramer, H. C., & Gardner, R. E. (1977). Advising by faculty. Washington, D.C.: National Education Association.

Laws, J. L. (1975). The psychology of tokenism: An analysis. Sex Roles,, 1, 51-67.

Lester, V., & Johnson, C. (1981). The learning dialogue: Mentoring. In J. Fried (Ed.) Education for student development. New directions for students services, Number 15. San Francisco, CA: Jossey-Bass.

Levinson, D. J., Darrow, C. M., Klein, E.B., Levinson, M.H., & McKee, B. (1976). Periods in the adult development of men: Ages 18 to 45. The Counseling Psychologist, 6(1), 21-25.

Levinson, D. J. (1978). The seasons of man's life. New York: Alfred A. Knopf, 1978.

Marsicano, H. E. (1981, March). Role of mentors in developing careers: Do women need mentors? Paper presented at the West Virginia University Council on Women's concerns--A conference on women's career management: Challenges and decisions, Morgantown, WV. (ERIC Document Reproduction Service No. ED 203 132).

McCaffrey, S. S., & Miller, T. K. (1980). Mentoring: An approach to academic advising. In F. B. Newton and K. L. Enders (Eds.), Student development practices: Strategies for making a difference. Springfield, IL: Charles C. Thomas.

McNeer, E. J. (1982). The role of mentoring in the career development of women administrators in higher education. Dissertation Abstracts International, 42(7), 2954A.

McNutt, A. S. (1979). A study of the role models of top-echelon women administrators in southern public institutions of higher education. Unpublished doctoral dissertation, George Peabody College for Teachers, Nashville, TN.

Missirian, A. K. (1981). The process of mentoring in the career development of female managers. Dissertation Abstracts International, 41(8), 3654A.

Moore, K. M., & Sangaria, M. A. D. (1979, April). Mobility and mentoring: Indications from a study of women administrators. Paper presented at the National Conference of the American Association for Higher Education, Washington, D.C. (ERIC Document Reproduction Service No. ED 177 975).

Nie, N. H., Hull, H., Jenkins, J. G., Steinbrenner, K., & Brent, D. H. (Eds.). (1975). SPSS: Statistical package for the social sciences, 2nd Ed. New York: McGraw-Hill.

Nunnally, J. C. (1967). Psychometric theory. New York: McGraw-Hill.

O'Neal, J. M., & Wrightsman, L. S. (in press). The mentoring relationship in psychology training programs. In Gerald F. Sumprer & S. Walfish (Eds.), Clinical, counseling and community psychology: A student guide to graduate training and professional practice. New York: Irvington Publishers.

Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. Review of Educational Research, 50(4), 545-595.

Phillips, G. M. (1979). The peculiar intimacy of graduate study: A conservative view. Communication Education, 28(4), 339-345.

Phillips, L. L. (1978). Mentors and proteges: A study of the career development of women managers and executives in business and industry. Dissertation Abstracts International, 38(11), 6414A-6415A.

Queralt, M. (1982, April). The role of the mentor in the career development of university faculty members and academic administrators. Paper presented at the annual meeting of the National Association for Women Deans, Administrators and Counselors, Indianapolis, IN. (ERIC Document Reproduction Service No ED 216 614).

Rawles, B. A. (1980). The influence of a mentor on the level of self-actualization of American scientists. Dissertation Abstracts International, 41(4), 1348A.

Rehor, J. R. (1981, November). Mentor and colleague relationships in academia. Paper presented at the annual meeting of the American Educational Studies Association, Boston, MA. (ERIC Document Reproduction Service No. ED 215 640).

Roche, G. R. (1979, January-February). Much ado about mentors. Harvard Business Review, 14-24.

Runions, T. (1982). Stewardship: training the gifted as community mentors. Programming for the gifted series. National Institute of Education, Washington, D.C. (ERIC Document Reproduction Service No. ED 224 269).

Schmidt, R., & Wolfe, J. S. (1980). The mentor partnership: Discovery of professionalism. NASPA Journal, 17(3), 45-51.

Schmoll, B. J. (1982). A description of mentor/mentee relationships among persons engaged in or preparing for professional roles. Dissertation Abstracts International, 42(8), 3730A.

Schuler, R. S. (1979). Male and female routes to managerial success. Personnel Administrator, 24(2), 35-38.

Shapiro, E. C., Haseltine, F. P., & Rowe, M. P. (1978). Moving up: Role models, mentors, and the "patron system." Sloan Management Review, 19(3), 51-58.

Solmon, L. C. (1976). Male and female graduate students. New York: Praeger Publishers.

Stein, S. L. (1981, March). Faculty expectations of doctoral and career mentors. Paper presented at the annual meeting of the Eastern Educaticnal Research Association, Philadelphia, PA. (ERIC Document Reproduction Service No. ED 204 273).

Stewart, W. A. (1977). A psychosocial study of the formation of the early adult life structure in women. (Doctoral dissertation, Columbia University). (University Microfilms No. 77-14,849).

Thomas, R., Murrell, P. H., & Chickering, A. W. (1982). Theoretical bases and feasibility issues for mentoring and developmental transcripts. In R. Brown and D. DeCoster (Eds.). New directions for student services: Mentoring-Transcripts systems for promoting student growth. Number 19. San Francisco, CA: Jossey-Bass.

Topp, R. F. (1977). The neurotic graduate student of our time. Improving College and University Teaching, 25(2), 105,107.

Wilson, R. C., Gaff, J. G., Dienst, E. R., Wood, L., & Bavry, J. L. (1975). College professors and their impact on students. New York: John Wiley & Sons.

Table 1

Loadings of Mentor Scale of Principal Components Factors

Factor Names and Related Items	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: Role Model				
V6 Enhanced Skills	0.80	0.01	0.17	0.20
V8 Intellect Stimulator	0.60	0.02	0.25	0.28
V5 Role Model	0.55	0.41	0.17	0.02
V1 Transmitted Professional Values	0.54	0.38	0.35	0.02
V4 Exemplar	0.50	0.38	0.11	0.28
V3 Shaped Identity	0.48	0.34	0.36	0.11
Factor 2: Advocate				
V16 Counselor	0.15	0.69	0.06	0.20
V15 Defense	0.04	0.46	0.18	0.15
Factor 3: Professional Socialization and Sponsorship				
V11 Introductions	0.13	0.23	0.68	0.07
V10 Career Assistance	0.17	-0.03	0.54	0.23
V2 Guide or Host	0.38	0.38	0.51	0.03
V7 Taught Politics	0.20	0.36	0.39	0.12
V12 Provided Information	0.32	0.18	0.38	0.26
Factor 4: Emotional Support and Active Encouragement				
V14 Encouraged Success	0.23	0.36	0.24	0.85
V13 Provided Emotional Support	0.39	0.40	0.15	0.43
V9 Encouraged Work Quality	0.46	0.27	0.23	0.41

Table 2

Eigenvalues and Percentages of Explained Variance of Principal Components

Factor Number and Name	Eigenvalue	Percent of Common Variance
Factor 1: Role model	6.53	40.8
Factor 2: Advocate	1.27	7.9
Factor 3: Professional Socialization and Sponsorship	1.18	7.4
Factor 4: Emotional Support and Active Encouragement	0.99	6.2

Table 3

Intercorrelations Among Mentor Factors

Factor Number and Name	Factor 1	Factor 2	Factor 3	Factor 4
(1) Role Model	—			
(2) Advocate	0.38	—		
(3) Professional Socialization and Sponsorship	0.52	0.36	—	
(4) Emotional Support and Active Encouragement	-0.38	-0.21	-0.31	—

Table 4

Percentage of Male and Female Graduate Students Who Experienced Specific Mentoring Relationships

Specific Mentoring Relationships	Males (n = 57)	Females (n = 85)	Both Sexes (N = 142)
Enhanced Skills	86	84	85
Intellect Stimulator	84	84	84
Encouraged Work Quality	81	80	80
Encouraged Success	74	84	80
Exemplar	79	80	80
Provided Emotional Support	81	77	78
Provided Information	81	74	77
Transmitted Professional Values	70	74	73
Role Model	68	68	68
Shaped Identity	61	62	62
Guide or Host	58	55	56
Counselor	46	60	54
Career Assistance	53	54	54
Taught Politics *	33	53	45
Introductions	40	39	39
Defense	33	34	34

* Males and females differed, $\chi^2(1) = 5.30$, $p < .025$.

Table 5

Percentage of Graduate Students of Different Ages Who Experienced Specific Mentoring Relationships

Specific Mentoring Relationships	Age 22-27 (n=44)	28-32 (n=43)	33-40 (n=40)	41-58 (n=13)
Enhanced Skills	82	91	85	77
Intellect Stimulator	86	86	83	77
Encouraged Work Quality *	84	91	73	62
Encouraged Success	86	84	75	62
Exemplar	82	81	80	69
Provided Emotional Support	77	86	78	62
Provided Information *	84	79	80	46
Transmitted Professional Values *	77	77	75	39
Role Model	66	67	80	46
Shaped Identity **	68	65	65	23
Guide or Host	61	58	60	23
Counselor	55	58	55	39
Career Assistance	71	47	48	46
Taught Politics	48	51	40	39
Introductions **	50	49	30	8
Defense	41	42	25	8

* Age groups differed, $p<.05$.

** Age groups differed, $p<.025$.

Table 6

Mean Factor Score Descriptive Statistics for Sex x Age Groupings

Sex							
Males				Females			
22-27	28-32	33-40	41-58	22-27	28-32	33-40	41-58
Factor 1							
n = 12	n = 17	n = 23	n = 4	n = 32	n = 26	n = 17	n = 9
M =-0.02	M = 0.09	M =-0.29	M =-0.32	M = 0.13	M =-0.23	M = 0.12	M = 0.53
MS= 1.03	MS= 0.87	MS= 0.54	MS= 0.00	MS= 0.78	MS= 0.32	MS= 1.18	MS= 1.25
Factor 2							
n = 12	n = 17	n = 23	n = 4	n = 32	n = 26	n = 17	n = 9
M = 0.36	M =-0.05	M =-0.02	M = 0.71	M = 0.17	M =-0.10	M =-0.06	M = 0.39
MS= 0.55	MS= 0.82	MS= 0.72	MS= 0.66	MS= 0.63	MS= 0.75	MS= 0.43	MS= 0.64
Factor 3							
n = 12	n = 17	n = 23	n = 4	n = 32	n = 26	n = 17	n = 9
M =-0.18	M = 0.08	M =-0.03	M = 0.12	M =-0.29	M =-0.12	M = 0.32	M = 0.73
MS= 0.56	MS= 0.73	MS= 0.66	MS= 0.54	MS= 0.58	MS= 0.73	MS= 0.46	MS= 0.34
Factor 4							
n = 12	n = 17	n = 23	n = 4	n = 32	n = 26	n = 17	n = 9
M = 0.11	M =-0.24	M = 0.47	M =-0.18	M =-0.21	M = 0.09	M =-0.30	M = 0.12
MS= 1.23	MS= 0.77	MS= 1.17	MS= 1.58	MS= 0.44	MS= 0.92	MS= 0.55	MS= 1.73

Table 7

Summary Table for Sex x Age x Factor ANOVA of Mentor Scale Factor Scores

Source of Variation	df	SS	MS	F
Between Ss	139			
Sex (A)	1	0.05	0.05	0.05
Age Groupings (B)	3	3.84	1.28	1.43
A x B	3	2.68	0.89	1.00
Error Between	132	118.34	0.90	
Within Ss	420			
Factors Mentor Scale (C)	3	1.37	0.46	0.69
A x C	3	3.92	1.31	1.97
B x C	9	5.92	0.66	0.99
A x B x C	9	12.50	1.39	2.10*
Error Within	396	262.43	0.66	
Total	559			

* $p < .029$.

Figure Caption

Figure 1. Mean factor scores for the Role Model factor for male and female graduate students at different age periods.

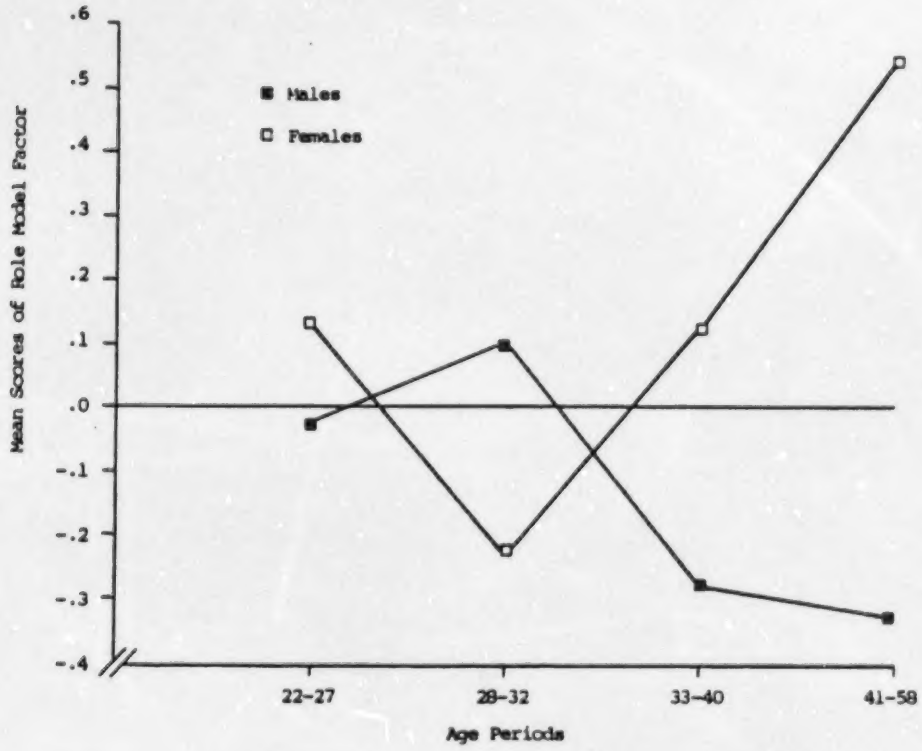

Figure Caption

Figure 2. Mean factor scores for the Emotional Support and Active Encouragement factor for male and female graduate students at different age periods.